PULLMAN

UNIT SASH BALANCES

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Michael Lynch, P.E., AIA, FAPT

PULLMAN

UNIT SASH BALANCES

NO WEIGHTS • NO CORDS

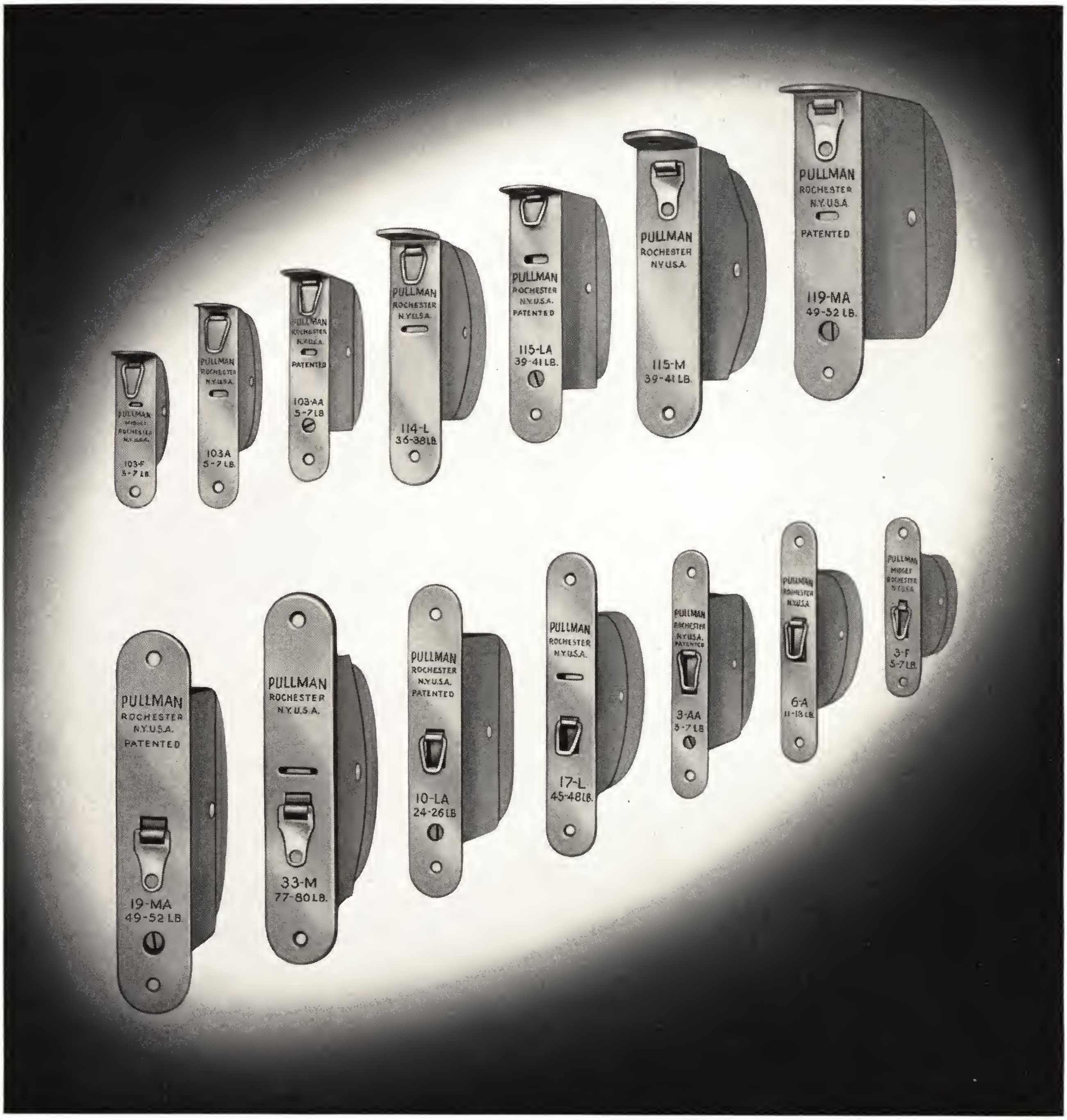
GUARANTEED FOR THE LIFE OF THE BUILDING

PULLMAN MFG.
CORPORATION
ROCHESTER, NEW YORK

CATALOG 42 • MAY, 1939

ESTABLISHED IN 1886

PULLMAN UNIT SASH BALANCES



THE FAMOUS PULLMAN FAMILY, fourteen in number, all with a striking family resemblance and each with a pedigree to be proud of. They have all made history by their outstanding efficiency and longevity which is characteristic of pioneer stock. Pullman has always pioneered and produced the best . . . that's why Pullman Sash Balances are guaranteed for the life of any building.

FOREWORD

EVERY so often a masterpiece appears in Art, Literature, Music or Science and gives to the world at large something beyond all price. By the same token we sincerely believe that the new Pullman Adjustable UNIT Sash Balance represents an outstanding achievement in the building industry. It is practical and effective, right in principle, simple in construction and fool proof, being the most radical and important improvement in the spring Sash Balance field over a period of 52 years. The new device insures perfect window operation at all times without removing the sash or Balance from the window opening. Re-adjustment is possible at any time to permanently maintain a perfectly balanced window. The tension of the inside coiled spring is actually changed, providing smooth, easy and quiet operation impossible with any other type of adjustment.

You will note by the illustrations appearing in this catalog that Pullman has a wide distribution covering all kinds of construction, being specified extensively by Government and State Architects and approved by the Bureau of Standards at Washington.

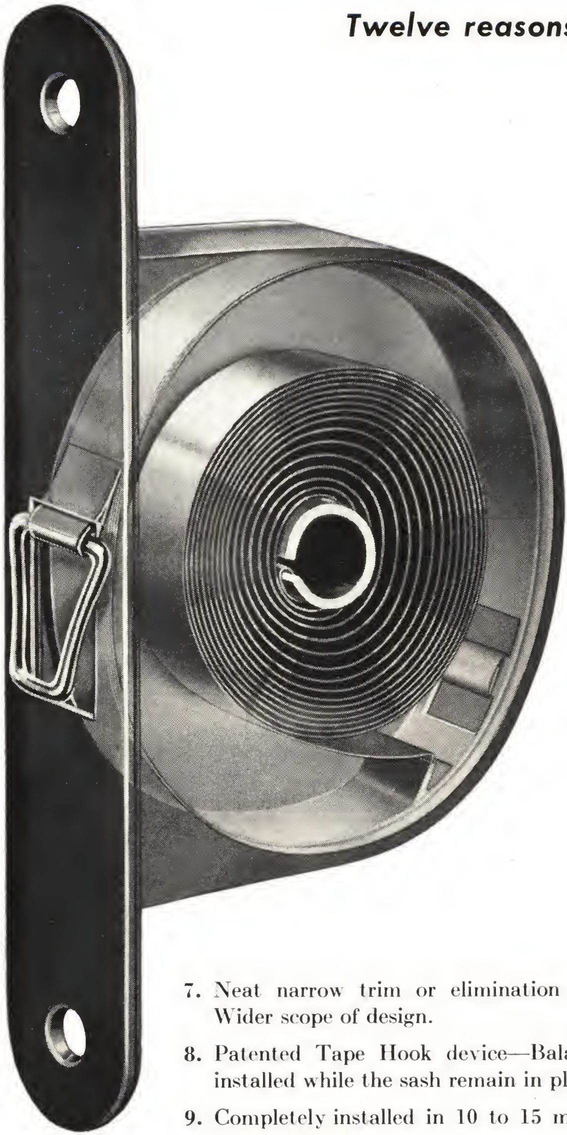
A leading member of the architectural profession has well said—"You can weatherstrip, caulk and adopt every other conceivable artifice but you cannot make a box window frame weather tight. With a solid plank frame, Pullman UNIT Sash Balances and the frame caulked you have a weather proof window for all time." A Half Century of Progress speaks for itself and readily explains why Pullman UNIT Sash Balances embody so many advantages and exclusive features which guarantee perfect operation and durability.

PULLMAN MFG. CORPORATION
Rochester, New York, U. S. A.

EVERY PULLMAN UNIT IS TESTED FOR PERFECT BALANCE BEFORE SHIPMENT

PULLMAN UNIT SASH BALANCES

Twelve reasons why Pullman Unit Sash Balances are so rapidly replacing old fashioned weights and cords



1. All pressed steel construction, light in weight and non-breakable.
2. Smooth, easy and quiet operation.
3. Entirely encased—no foreign matter can penetrate inside and interfere with free action of the moving parts.
4. Double face plate— special finishes such as solid brass and bronze, also chromium plate are possible at low extra cost.
5. Weight boxes discarded—no leakage of cold air.
6. Overhead Type Balances make Narrow Mullions and maximum light area possible.

7. Neat narrow trim or elimination of trim entirely. Wider scope of design.
8. Patented Tape Hook device—Balances removed or installed while the sash remain in place.
9. Completely installed in 10 to 15 minutes per double hung opening.
10. New patented Adjustable device—spring tension can be changed with an ordinary screw driver—impossible with any other type of adjustment.
11. Perfect window operation at all times at a cost comparable with weights and cords.
12. *Guaranteed for the life of the building. When each sash is accurately weighed and our installation instructions are carefully followed we Guarantee our Balances against imperfect workmanship or material during the life of the building. We will repair or replace at our factory free of charge any such imperfect Balances.*

Gordon & Kaelber, Architects

A. W. Hopeman & Sons, Contractors

CUTLER UNION is the outstanding landmark on the campus of the University of Rochester (Women's Division). This imposing building is equipped throughout with Pullman Unit Sash Balances.

York & Sawyer, Butler & Kohn, Architects

Cauldwell-Wingate Co., Contractors

Bronze Double Hung Windows—General Bronze Corporation

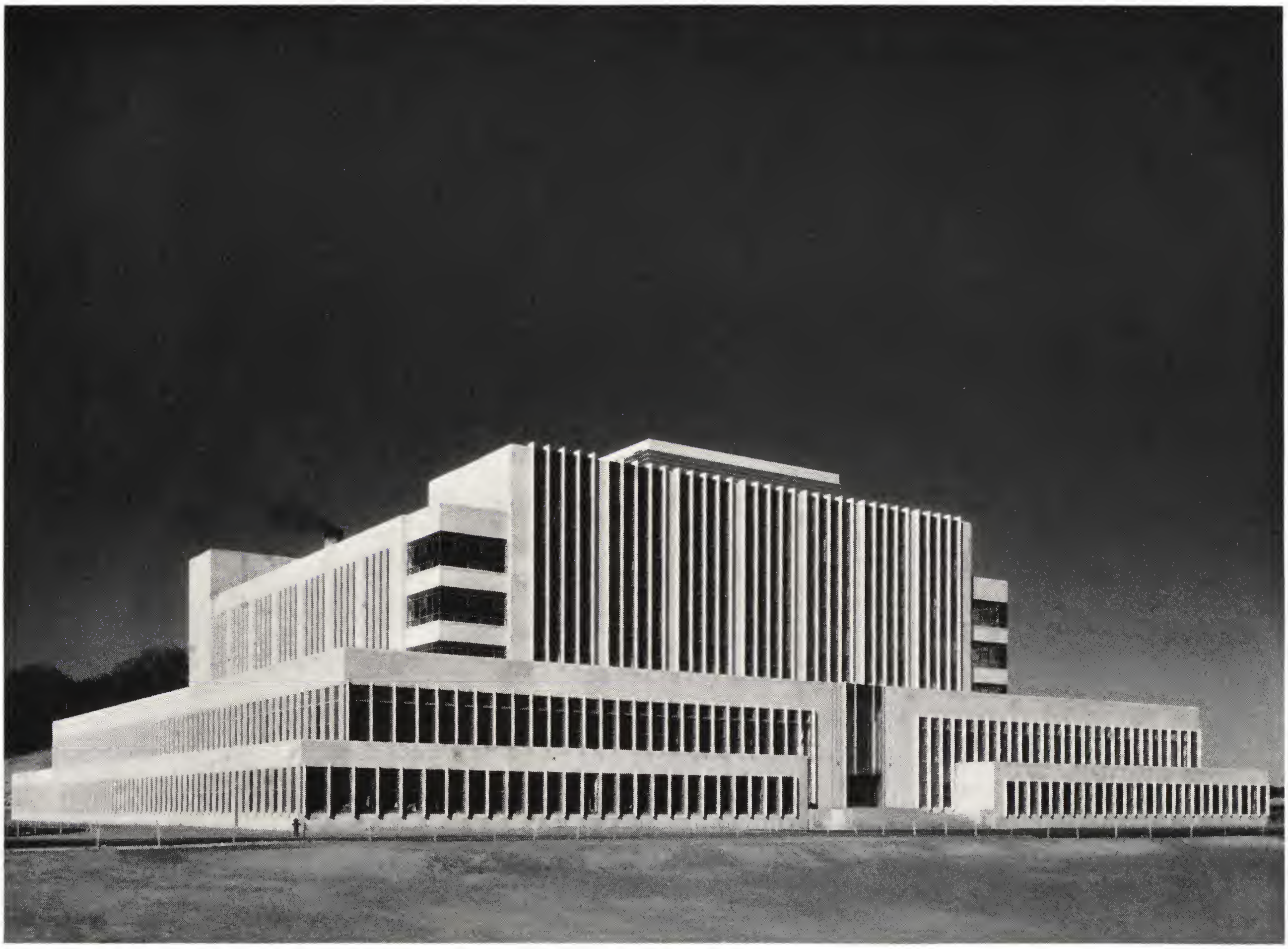
WELFARE ISLAND HOSPITAL GROUP.

On a historic rock lying between Long Island and Manhattan stands this hospital whose windows are raised and lowered by Pullman Sash Balances. As long as these buildings stand they will perform their duty with ease and quiet.

M. B. Schmidt, Rosario Candela, Architects

Aluminum Double Hung Windows, General Bronze Corporation

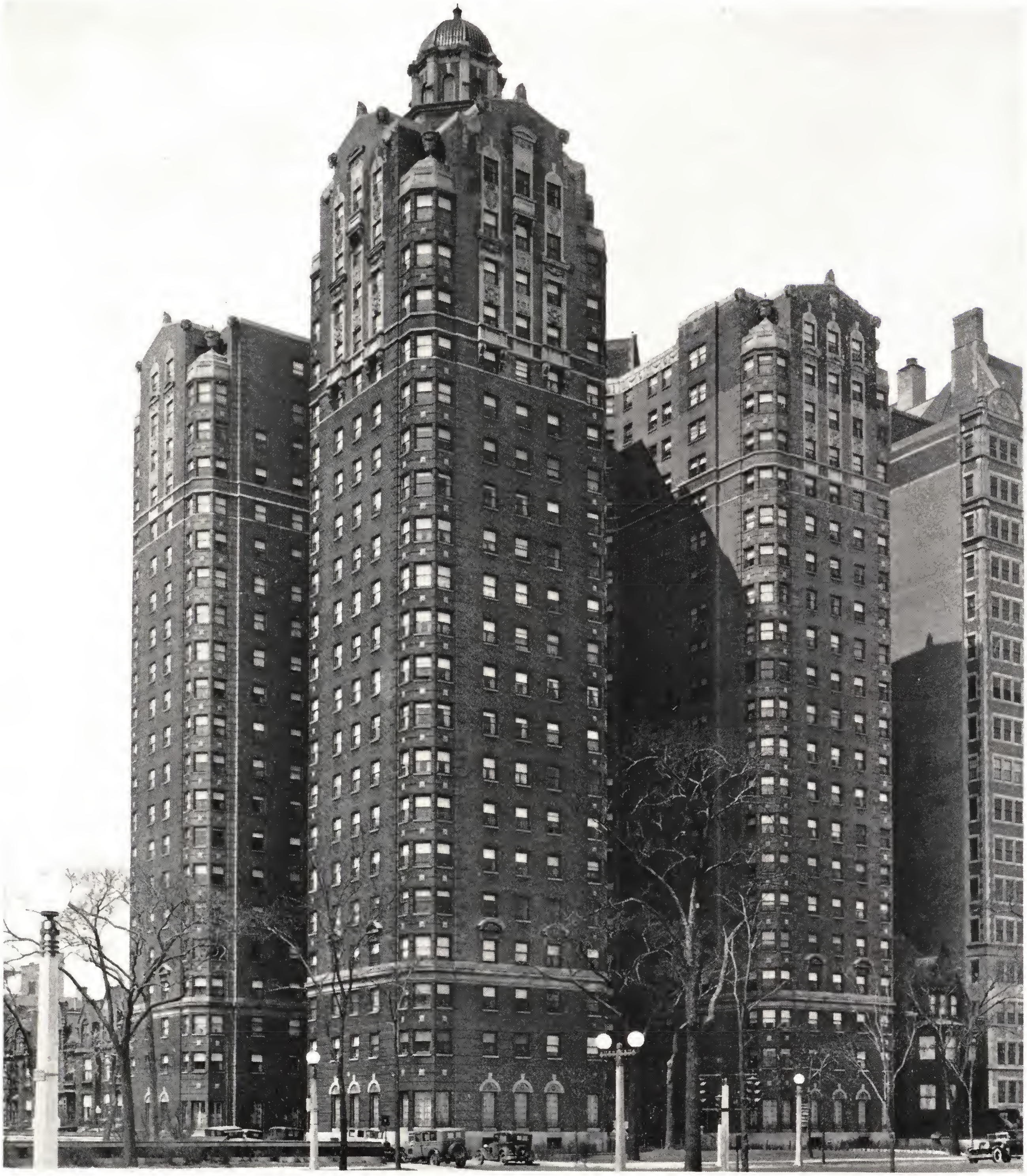
APARTMENT BUILDING, 72nd Street and Madison Ave., New York. For good measure we show above another of the many buildings where Pullman Sash Balances are supreme in New York.



HOLABIRD & ROOT, ARCHITECTS, CHICAGO, ILL. C. B. FRITZ CO., GENERAL CONTRACTORS, MADISON, WIS.

THE FOREST PRODUCTS LABORATORY

Gracing the campus of the University of Wisconsin, stands this modern building constructed by the Department of Agriculture. Throughout this beautiful structure Pullman Sash Balances operate the windows which are of paramount importance to a daylight laboratory.



HOOPER & JANUSCH, ARCHITECTS

HALLBAUER & LABAHN, GENERAL CONTRACTORS

DOUBLE HUNG STEEL WINDOWS BY THE RUDA COMPANY

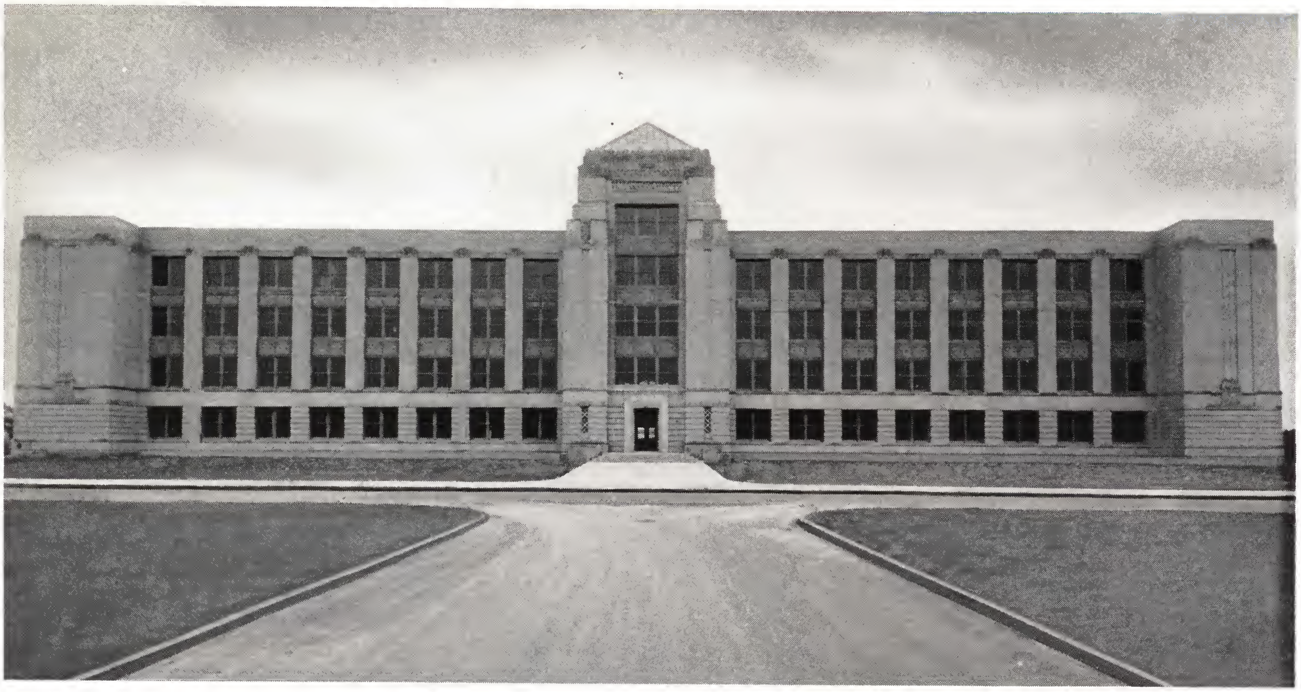
1400 LAKE SHORE DRIVE, CHICAGO

This modern apartment house is only one of many which are Pullman equipped.

P. G. Silber, Architect

Walsh & Burney, Contractors

BLUE BONNET HOTEL, San Antonio, Texas, is one of innumerable hotels throughout the land having windows which are completely equipped with Pullman Unit Sash Balances.



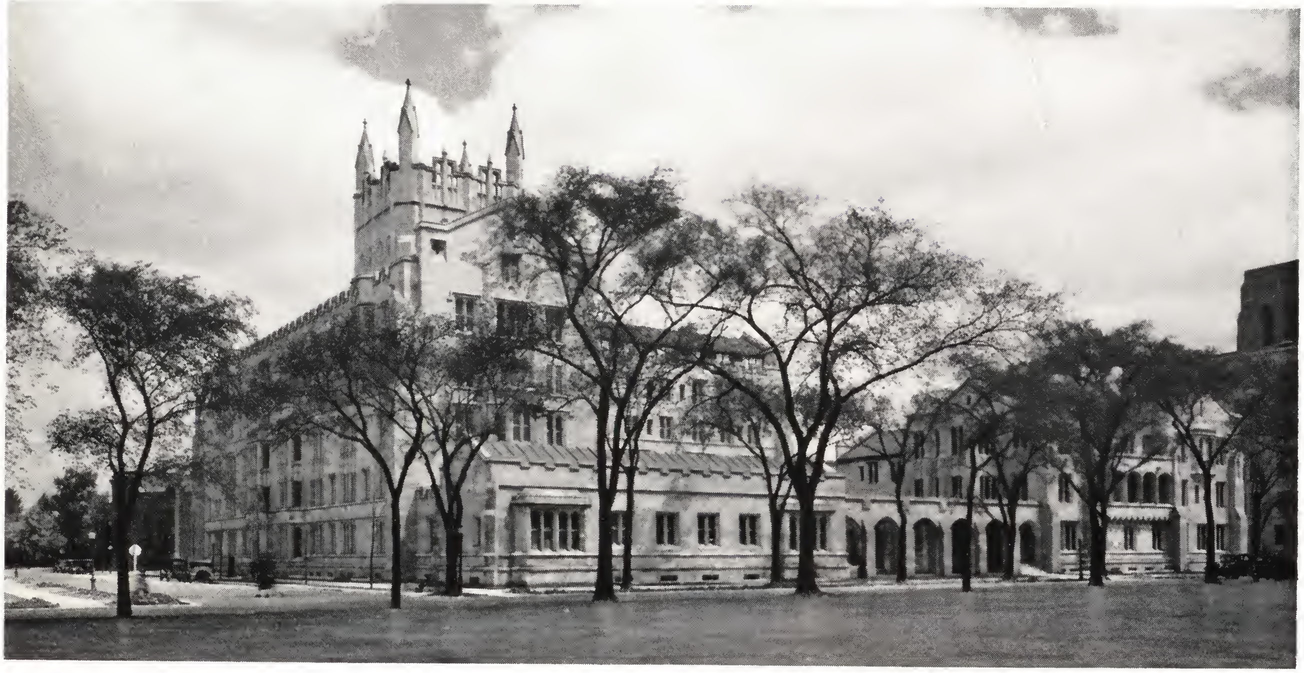
Daniel G. McNeil, Architect

Robert E. Williams & Sons Co., Contractors

KENSINGTON HIGH SCHOOL, BUFFALO, NEW YORK

Non-Stick Double Hung Windows—N. S. W. Co., Detroit, Michigan

Whitmer-Jackson Co., Buffalo, New York, Distributors



Schmidt, Garden & Erickson, Architects

H. B. Barnard, General Contractor

CHICAGO LYING-IN HOSPITAL, CHICAGO, ILLINOIS

Residence—Montclair, N. J.
Architect—Arthur T. Remick

Residence—R. F. Burley, Wanaka, N. Y.
Architect—Frederick A. Backus

230 Doncaster Road, Buffalo, N. Y.
Designed and Built by H. N. Rounds
N. S. W. Co. Windows

Residence—Westchester County, N. Y.
Architect—Arthur T. Remick

Along the famous "board walk" of Atlantic City stands this inviting cottage in the Model American Village which plays host to thousands of visitors. Pullman is represented here and we cordially invite you to step inside for a little home-building inspiration. You will find Pullman Unit Sash Balances as popular as the "board walk" itself.

Residence—Honolulu
Courtesy Theo. H. Davies
& Co., Ltd.

Residence—Mr. Rafael,
Meza, Ayan, San Salvador
Courtesy
Hubert Goria, Architect and
John D. Williams Export Corp.

Cork Street
Housing
Scheme,
Dublin
Courtesy
Robert Adams,
London

Pehuajo Hospital, Pehuajo, Buenos Aires
Donated by Miss Maria, Mr. Arnaldo and
Dr. Juan A. Inchauspe

Residence—Dr. Robert G. Jackson, Toronto, Ont.
Architect—C. Wellington Smith
Contractor—John Laxton

Residence—Panama. Courtesy Grebien & Martinez
and Chas. E. Griffin Co.

Hotel Royale, Barbados, B. W. I.
Courtesy J. A. P. Bowhill

PULLMAN UNIT SASH BALANCES

Are More Economical than Weights and Cords

Expensive box frames are eliminated. Pockets for reaching weights are unnecessary. Less lumber and labor throughout.

Pullman Balances are installed at rate of 10 to 15 minutes per window as compared with 30 to 45 minutes or more for weights and cords—shown by time tests on actual jobs. Experienced carpenters can install in 6 to 10 minutes. See illustrations on page 15.

Durable—the spring remains uniform in tension and does not require oiling. Installations of 40 years ago are working satisfactorily.

Tight construction. No leakage of cold air as with pulley opening. Saves your coal bill.

The sash are grooved at *one* operation instead of two.

★

OVER $9,000.00 SAVED IN ONE BUILDING BY USING PULLMAN UNIT SASH BALANCES

A 17-story apartment with 905 windows. Lead weights originally specified—25 tons. Pullman Balances installed—2¼ tons.

Even if cast iron weights had been specified Pullman Balances would have saved over $2,500.

Substantial savings are effected in freight and cartage and in handling to and on the job—labor costs reduced to a minimum—tonnage reduced 90%—all by using Pullman Unit Sash Balances, the MODERN EQUIPMENT FOR DOUBLE-HUNG WINDOWS.

DETROIT TOWERS
Detroit, Michigan

Architect:
Walter W. Ahlschlager, Inc.
Chicago, Illinois

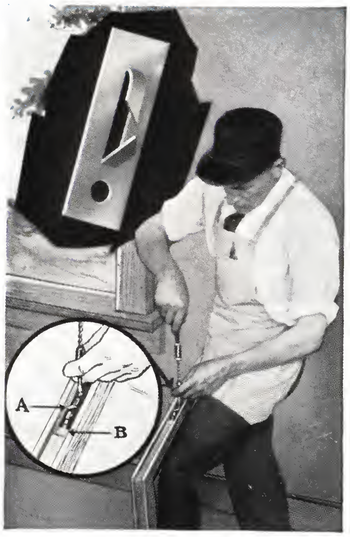
General Contractors:
Walbridge, Aldinger Company
Detroit, Michigan

Window Frames by:
Anderson Mfg. Co.
Louisville, Kentucky

Ten tons of weight replaced by one ton and ten men's work done by one man where PULLMAN UNIT SASH BALANCES ARE INSTALLED

DOUBLE HUNG WINDOWS COMPLETELY INSTALLED IN 10 TO 15 MINUTES

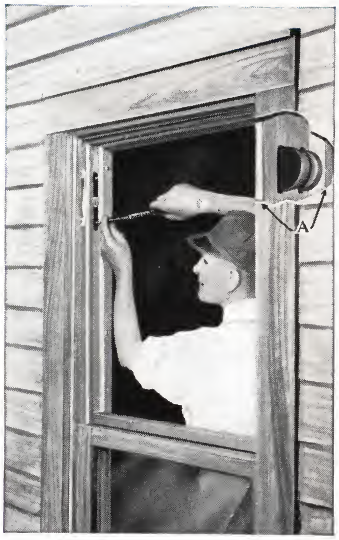
No pulleys • cords • weights • weight pockets to bother with



1 PLACE TAPE HOOK IN SASH

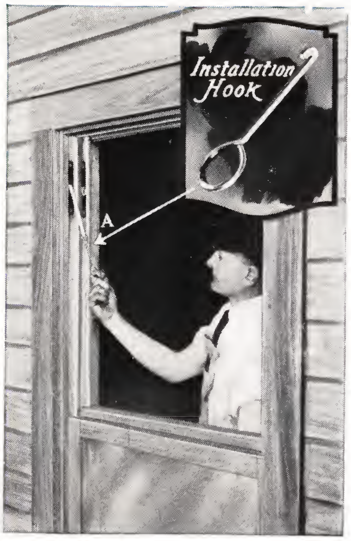
A—Angle piece "A" must remain in open position, just flush with edge of sash. Don't hammer down.

B—Details for grooving sash in ONE operation on page 21. Dummies for mortising frames furnished free on request.



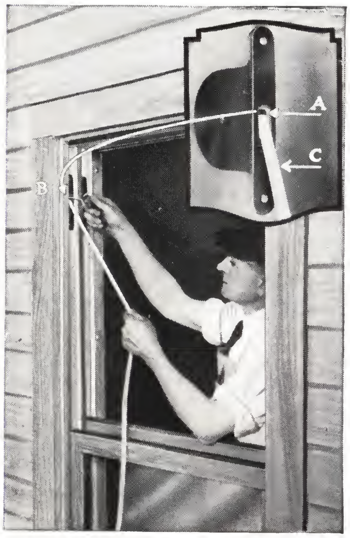
2 PLACE BALANCES IN MORTISE

A—Do not place studs too close to frame. Leave sufficient room for depth of Balances. Metal Housings are available for concrete construction at a moderate cost. They may also be used for brick or stone construction if desired.



3 USE INSTALLATION HOOK

A—New special device to simplify installation. We furnish without charge direct or thru your dealer. It saves time and trouble. An ordinary nail may be used to take the tension off spring if this hook is not at hand.

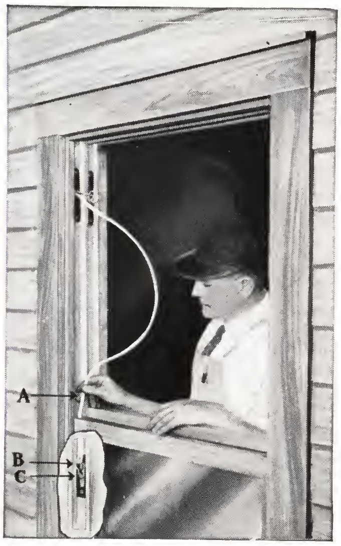


4 TAKE TENSION OFF SPRING

A—Slot in revolving drum appears here when tape is pulled out entirely.

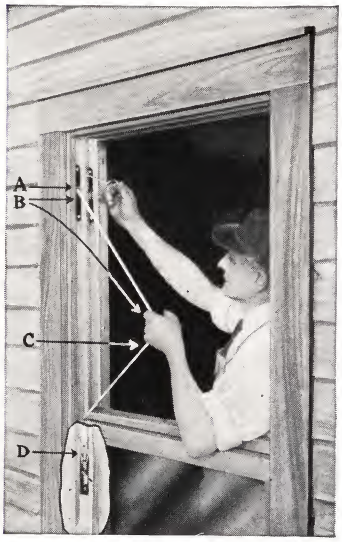
B—Insert small end of Installation Hook or nail in slot "A".

C—Steel, rust proofed, aluminoy tape *Keep free from paint and do not kink.*



5 FASTEN TAPE TO TAPE HOOK

A—Exert firm downward pressure on tape here, causing loop at end of tape to hump at point "B" against angle piece "C" of Tape Hook. Draw up slowly until loop engages Hook—see Tape Hook illustration No. 1—and hold there firmly as shown in illustration "6".



6 REMOVE INSTALLATION HOOK

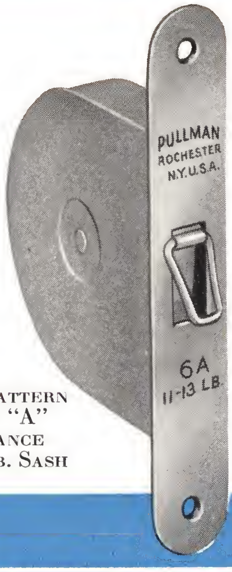
A—Remove Installation Hook.

B—Ease tape slowly back into Balance while pulling "C" firmly upwards at same time, so that loop is held tightly against Hook part of Tape Hook.

Installation is now complete, spring tension preventing loop from disengaging.

BALANCES MAY BE REMOVED WHILE STOPS AND SASH REMAIN IN PLACE

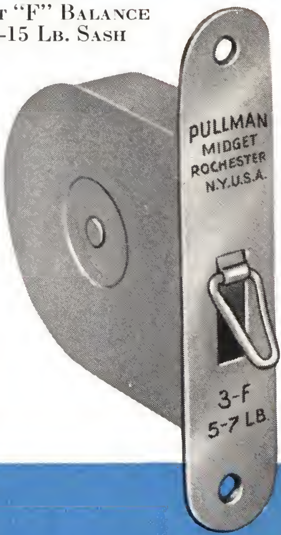
Reverse procedure of installation. Draw tape entirely out of Balance. Insert Installation Hook or nail in slot of revolving drum. Take hold of slack tape close to sash. Draw up firmly to straighten loop at end of tape. Next drop tape down slowly until loop passes end of Hook part of Tape Hook, twisting slightly clockwise and withdraw slowly.



Side Pattern
Unit "A"
Balance
4-29 Lb. Sash

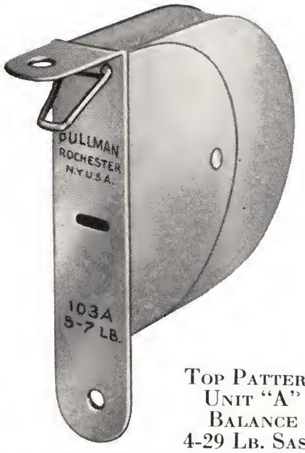
Our Precision Tools and Dies Made
Under the Direction of This
Man for 28 Years

Side Pattern
Midget
Unit "F" Balance
4-15 Lb. Sash



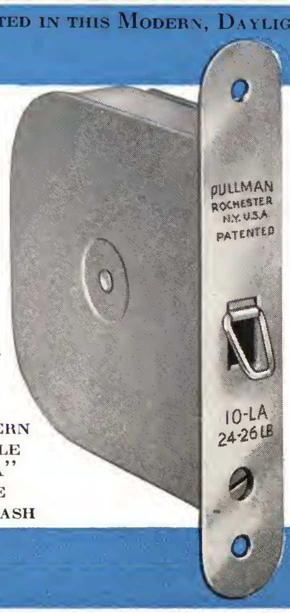
PULLMAN MANUFAC

Located in this Modern, Daylight Buildin

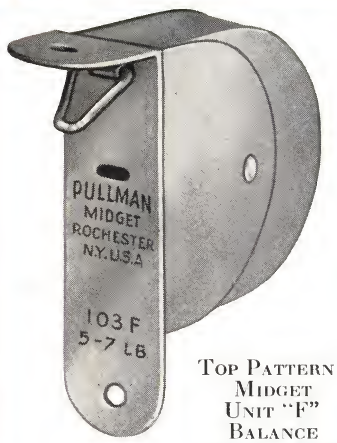


Top Pattern
Unit "A"
Balance
4-29 Lb. Sash

Section of the Punch Press Department

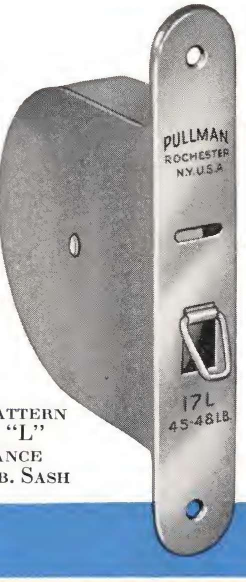


Side Pattern
Adjustable
Unit "LA"
Balance
10-54 Lb. Sash



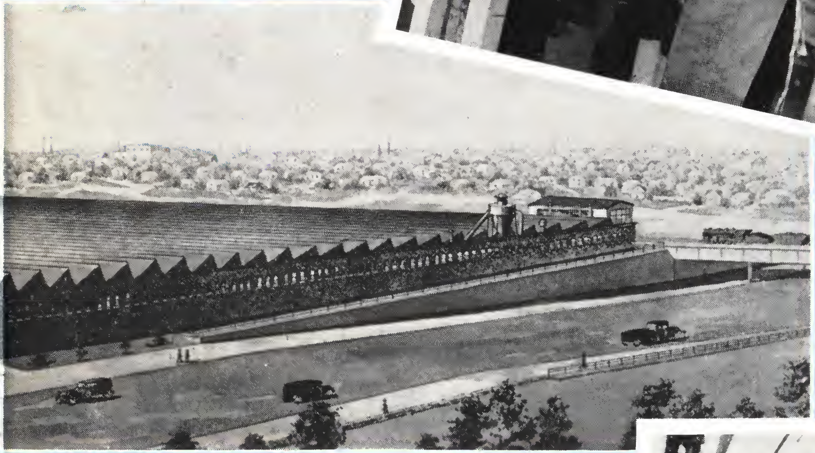
Top Pattern
Midget
Unit "F"
Balance
4-15 Lb. Sash

Every Balance Manufactured Has Been Made and Tested Under the Supervision of This Man for 43 Years

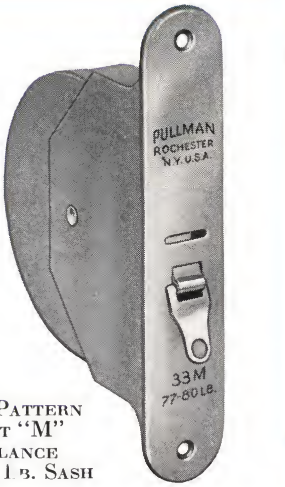


Side Pattern
Unit "L"
Balance
10-54 Lb. Sash

URING CORPORATION

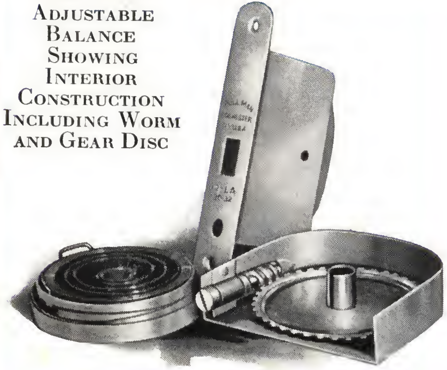


T 1170 University Ave., Rochester, N. Y.



Side Pattern
Unit "M"
Balance
24-105 Lb. Sash

Unit "LA"
Adjustable
Balance
Showing
Interior
Construction
Including Worm
and Gear Disc



Patented August 18, 1936

Portion of the Assembly Department

SPECIFICATIONS

Insert the following clause in the **Millwork** *portion of the specifications:*

1. All double hung windows are to be operated by Unit Sash Balances as manufactured by the Pullman Manufacturing Corporation, Rochester, N. Y. The stiles of sash shall be grooved at the mill in accordance with the Pullman Manufacturing Corporation's details. All boxings and weight pockets for window weights shall be eliminated and frames provided as detailed.

Insert the following clauses in the finish **Carpentry** *specifications:*

2. This contractor shall provide and install Unit Sash Balances as manufactured by the Pullman Mfg. Corporation, Rochester, N. Y., on all double hung windows throughout.

3. The manufacturer's standard metal housing shall be provided by this contractor to the mason where frames are surrounded by poured concrete.

4. All Balances for windows throughout (*state location*).

5. shall be Side Type

6. and all Balances for windows throughout (*state location*)

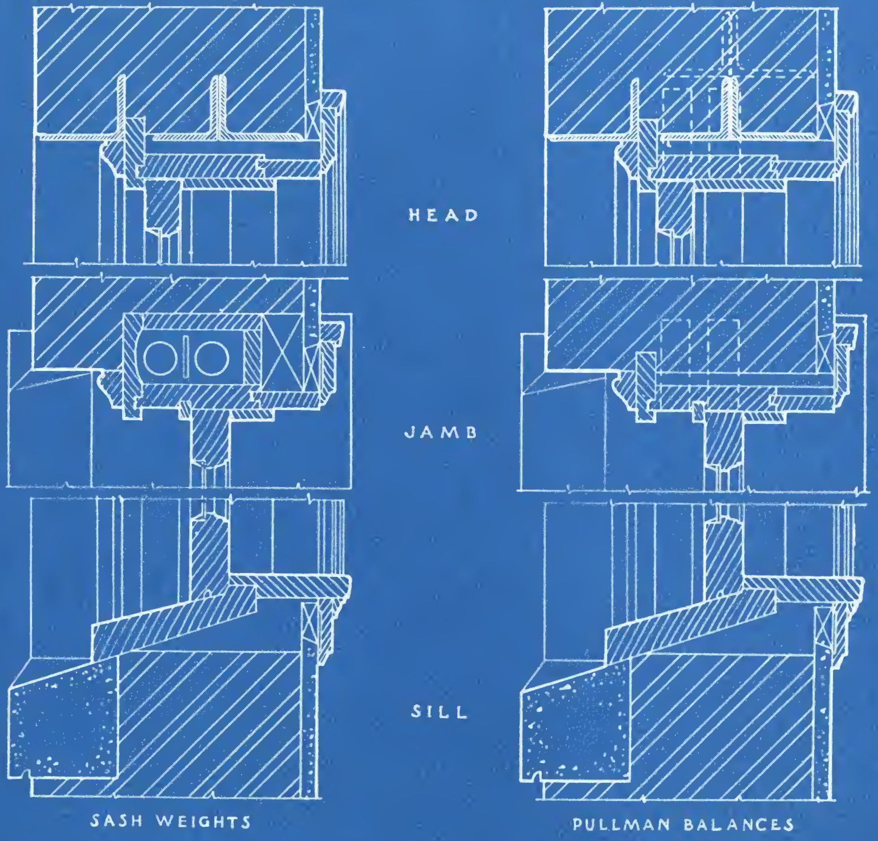
7. shall be Overhead Type.

8. All sash shall be accurately weighed by scales as soon as completed and the correct size and tension of Balances shall be provided for the sash of varying weights as required by the manufacturer's guarantee so as to balance the sash perfectly at all points.

9. All face plates shall have manufacturer's standard finish except those for windows in (*state location*)

10. which shall be (*state finish required*).

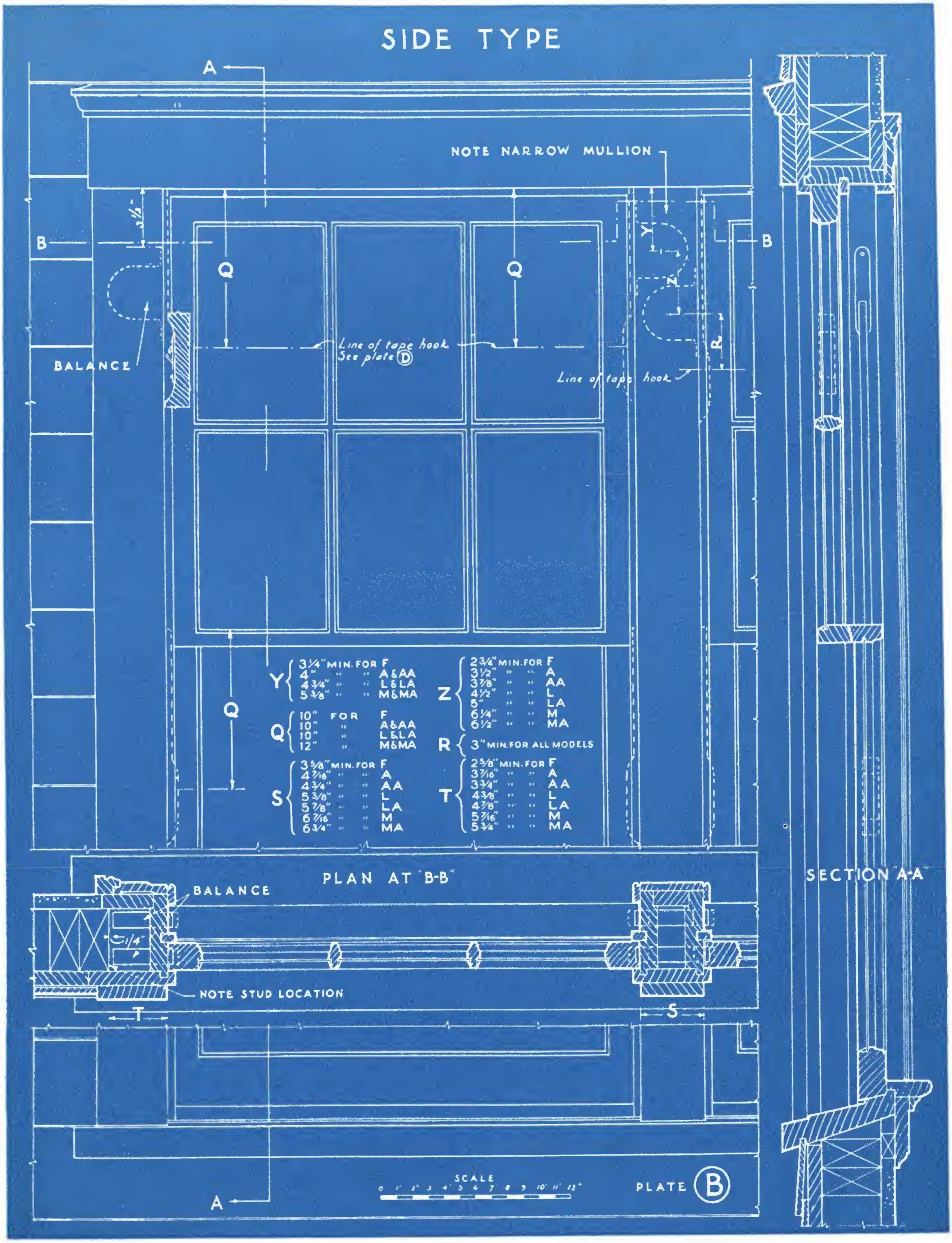
DETAILS SHOWING SASH WEIGHTS COMPARED WITH PULLMAN BALANCES



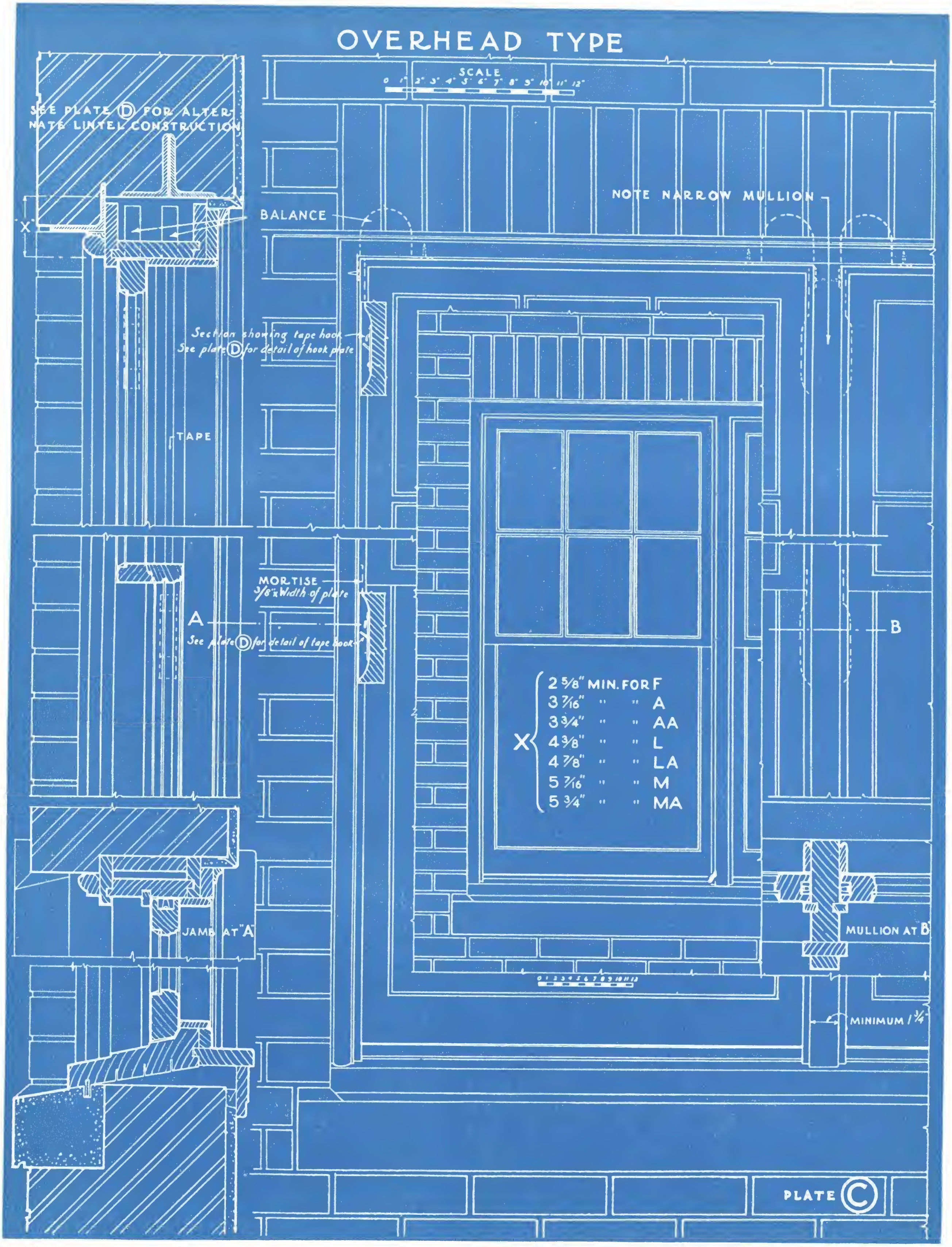
43 SQ. FT. REQUIRED --- VS. --- 32 ⅓ SQ. FT. ONLY

MILL QUOTATIONS HAVE SHOWN A SAVING OF AS MUCH AS $2.00 PER OPENING IN FRAMES ALONE, BY USING PULLMAN SASH BALANCES.

PLATE Ⓐ



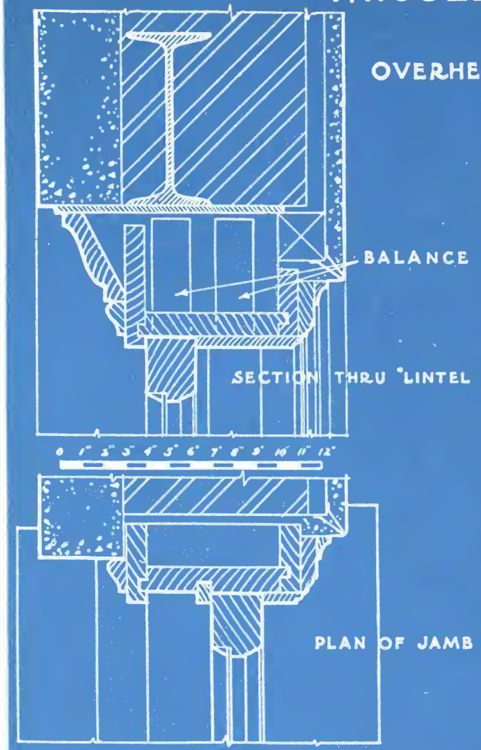
FOR COMPLETE DIMENSIONS OF ALL MODELS SEE PAGES 22-30 INCLUSIVE

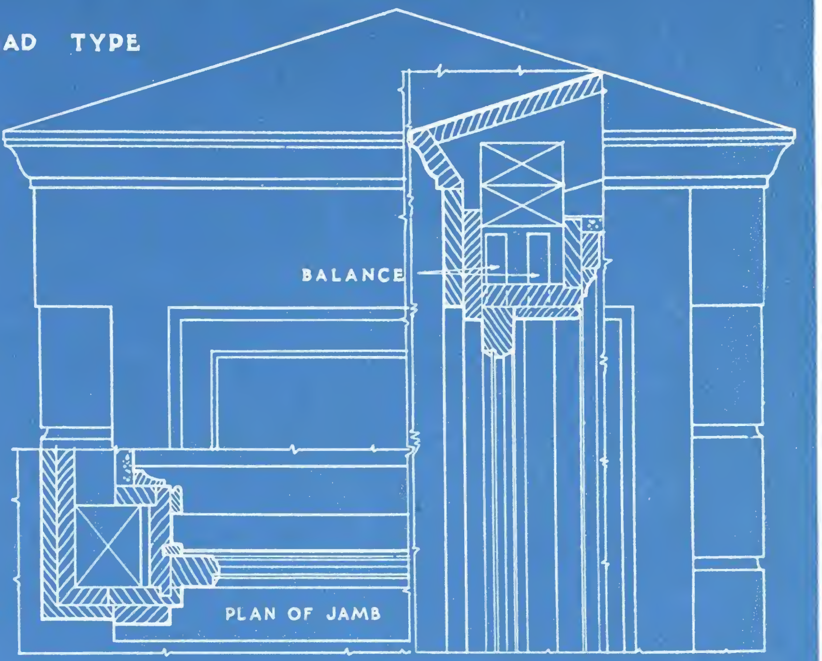


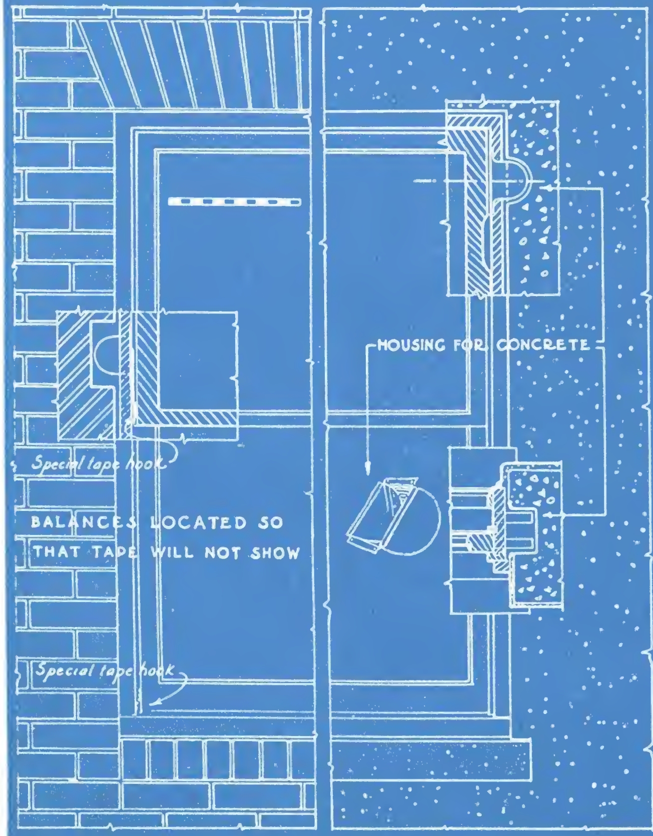
FOR COMPLETE DIMENSIONS OF ALL MODELS SEE PAGES 22 - 30 INCLUSIVE

MISCELLANEOUS DETAILS

OVERHEAD TYPE



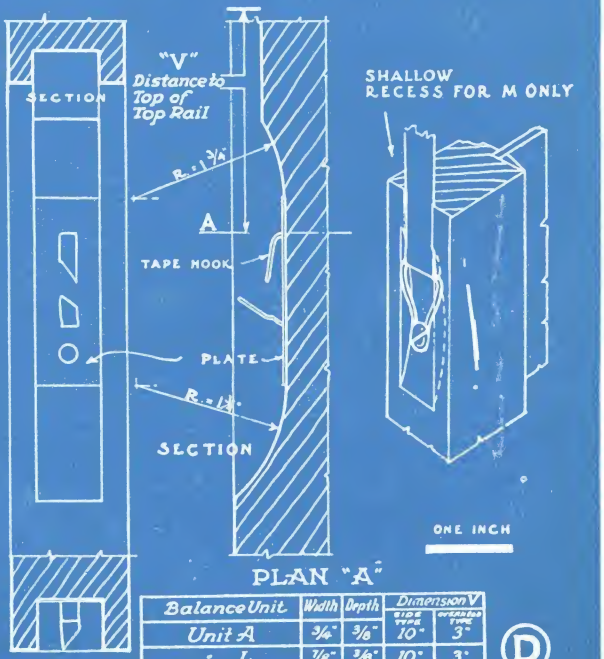




METHOD OF GROOVING SASH TO RECEIVE TAPE HOOK

[This Mill Work Requires One Operation Only]

Make a form or templet same shape as the rabbet to be cut in edge of sash, and set 2 points on which the stile is placed. The points keep it from slipping on the form. If the moulder is set up properly it will drop into the edge the 5/8," and run the distance necessary to put the Hook in place. Then the form carries the work out so that only 3/8" is taken out.



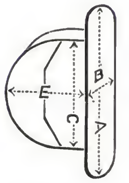
Balance Unit	Width	Depth	Dimension V	
			SIDE TYPE	OVERHEAD TYPE
Unit A	3/4"	3/8"	10"	3"
" L	7/8"	3/8"	10"	3"
" M	1 1/4"	3/8"	12"	3"

D

UNIT "A" NON-ADJUSTABLE BALANCES

UNIFORM MORTISE FOR SASH WEIGHING 4 TO 29 LBS.

Specify the Type required when ordering.

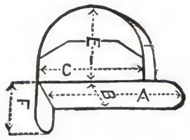


SIDE TYPE

⅓ Actual Size

Dimensions

A	6″
B	1″
C	$3\frac{7}{16}''$
E	$3\frac{7}{16}''$



Dimensions

A	$4\frac{11}{16}''$
B	1″
C	$3\frac{7}{16}''$
E	$3\frac{7}{16}''$
F	$1\frac{5}{16}''$

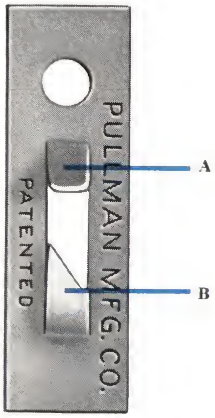
OVERHEAD TYPE

⅓ Actual Size

Tape should be attached about 3″ below top rail of sash as compared with 10″ for Side Type—see drawing pages 19 and 20.

UNIT "A" is the popular size of Balance for residence work since its range of weight capacity meets the ordinary requirements of that type of building. The patented Tape Hook device simplifies and expedites installation, see pages 4 and 15. The Overhead type makes Narrow Mullions and a maximum light area possible. Special finishes to match the other window hardware such as brass and bronze are available in plated or solid material also nickel, copper or chromium plating at a nominal extra cost by reason of the double face plate construction.

Dummy Balances are furnished free of charge for mortising purposes. See page 31. "How to Order"



Unit A Tape Hook Full Size

Exclusive patented
Pullman feature

A—Hook

B—Angle piece—
this must not be closed

See Pages 4 and 15

**The Lengths of Tape Shown Below
Represent The Extreme Run or Travel Possible**

Weight of Unit "A" Per Set—3 to 5 Lbs.

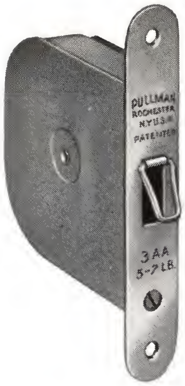
See Page 31—How to Order

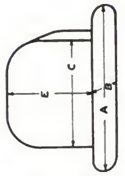
SIDE TYPE					OVERHEAD TYPE				
Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	Per Set of 4 Bal. For 2 Sash	Code Word	Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	Per Set of 4 Bal. For 2 Sash	Code Word
2-A	4 to 5	46	$2.25	Aback	102-A	4 to 5	46	$2.25	Acarus
3-A	5 to 7	"	"	Abel	103-A	5 to 7	"	"	Acate
4-A	7 to 9	"	"	Abhor	104-A	7 to 9	"	"	Accent
5-A	9 to 11	"	2.65	Abide	105-A	9 to 11	"	2.65	Acclaim
6-A	11 to 13	"	"	Abject	106-A	11 to 13	"	"	Accloy
7-A	13 to 15	"	"	Abjure	107-A	13 to 15	"	"	Accord
8-A	15 to 17	"	2.80	Abkari	108-A	15 to 17	"	2.80	Accuse
9-A	17 to 19	"	"	Ablaze	109-A	17 to 19	"	"	Aconite
10-A	19 to 21	"	"	Ably	110-A	19 to 21	"	"	Acorn
11-A	21 to 23	"	3.15	Aboard	111-A	21 to 23	"	3.15	Acquire
12-A	23 to 25	"	"	Aboon	112-A	23 to 25	"	"	Acquit
13-A	25 to 27	"	"	Abox	113-A	25 to 27	"	"	Acre
14-A	27 to 29	"	"	Abrade	114-A	27 to 29	"	"	Acrid

UNIT "A-A" ADJUSTABLE BALANCES

UNIFORM MORTISE FOR SASH WEIGHING 4 TO 29 LBS.

Specify the Type required when ordering.



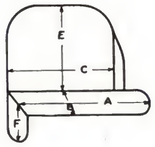


SIDE TYPE

⅓ Actual Size

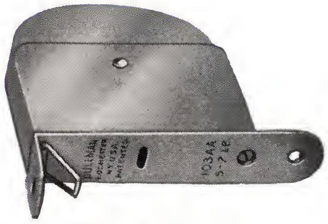
Dimensions

A.........6″
B.........1″
C.........3⅝″
E.........3¾″



Dimensions

A.........4$\frac{13}{16}$″
B.........1″
C.........3⅝″
E.........3¾″
F.........1$\frac{3}{16}$″

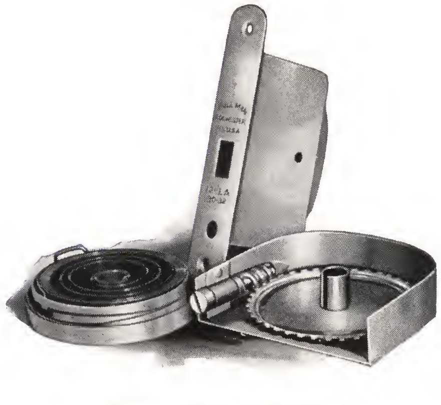


OVERHEAD TYPE

⅓ Actual Size

Tape should be attached about 3″ below top rail of sash as compared with 10″ for Side Type—see drawing pages 19 and 20.

UNIT "A-A" BALANCES and the other sizes of adjustable models have an appreciable wide range of adjustment beyond the capacity stamped on the face plate. They are adjustable downwards to the next lighter strength and upwards to the next stronger Balance by turning the adjusting screw in a clockwise direction to strengthen and counter-clockwise to weaken tension of the inside coiled spring. Perfect and permanent satisfactory balancing of the sash is assured at all times by means of an ordinary screw driver without removal of the sash or Balance from the window opening.



Patented August 18, 1936

Dummy Balances are furnished free of charge for mortising purposes.

The Lengths of Tape Shown Below
Represent The Extreme Run or Travel Possible

Weight of Unit "AA" Balances—5 to 6½ Lbs. Per Set

See Page 31—How to Order

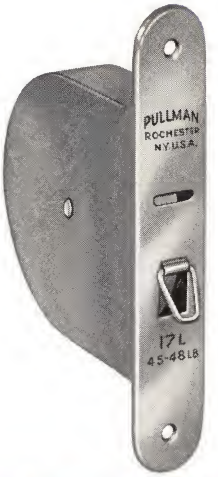
SIDE TYPE					OVERHEAD TYPE				
Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	Per Set of 4 Bal. For 2 Sash	Code Word	Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	Per Set of 4 Bal. For 2 Sash	Code Word
2-AA	4 to 5	46	$2.70	Allay	102-AA	4 to 5	46	$2.70	Amass
3-AA	5 to 7	"	"	Allege	103-AA	5 to 7	"	"	Amaze
4-AA	7 to 9	"	"	Allocate	104-AA	7 to 9	"	"	Ambage
5-AA	9 to 11	"	3.20	Allodial	105-AA	9 to 11	"	3.20	Amber
6-AA	11 to 13	"	"	Allograph	106-AA	11 to 13	"	"	Amble
7-AA	13 to 15	"	"	Allopath	107-AA	13 to 25	"	"	Ambush
8-AA	15 to 17	"	3.40	Allot	108-AA	15 to 17	"	3.40	Amend
9-AA	17 to 19	"	"	Allow	109-AA	17 to 19	"	"	Amid
10-AA	19 to 21	"	"	Alloy	110-AA	19 to 21	"	"	Amiss
11-AA	21 to 23	"	3.80	Allude	111-AA	21 to 23	"	3.80	Amity
12-AA	23 to 25	"	"	Allure	112-AA	23 to 25	"	"	Amoeba
13-AA	25 to 27	"	"	Allusion	113-AA	25 to 27	"	"	Among
14-AA	27 to 29	"	"	Alluvial	114-AA	27 to 29	"	"	Amour

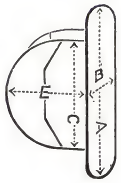
NOTE: These Balances are capable of adjustment to one size above and one size below the number stamped on the face of the Balance

UNIT "L" NON-ADJUSTABLE BALANCES

UNIFORM MORTISE FOR SASH WEIGHING 10 TO 54 LBS.

Specify the Type required when ordering.



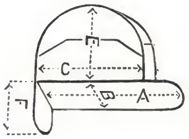


SIDE TYPE

⅓ Actual Size

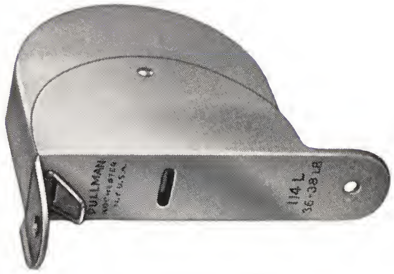
Dimensions

A……… $7\frac{7}{16}''$
B……… $1\frac{3}{8}''$
C……… $4\frac{7}{16}''$
E……… $4\frac{3}{8}''$



Dimensions

A……… $5\frac{7}{8}''$
B……… $1\frac{3}{8}''$
C……… $4\frac{7}{16}''$
E……… $4\frac{3}{8}''$
F……… $1\frac{1}{2}''$



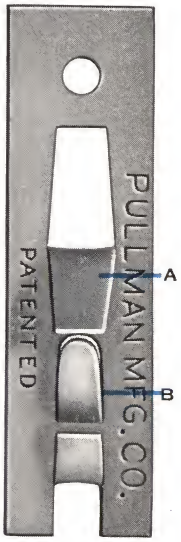
OVERHEAD TYPE

⅓ Actual Size

Tape should be attached about 3″ below top rail of sash as compared with 10″ for Side Type—see drawing pages 19 and 20.

UNIT "L" BALANCES are similar to the UNIT "A" Balances except that the case or housing is larger and the weight range extends to 54 lb. sash. These Balances are used for larger types of buildings such as Schools, Hospitals, and Apartments where the sash are usually heavier than those found in residential construction. These Balances do not have a separate face plate and in order to furnish special finishes the entire outside frame must be plated or of solid material as may be required. A Tape Hook of slightly heavier construction is furnished with the UNIT "L" Balances as shown in the illustration on this page.

Dummy Balances are furnished free of charge for mortising purposes.



Full Size

Unit "L" Tape Hook

Exclusive patented
Pullman feature

A—Hook
B—Angle piece.
This must not be closed
See pages 4 and 15

The Lengths of Tape Shown Below
Represent The Extreme Run or Travel Possible

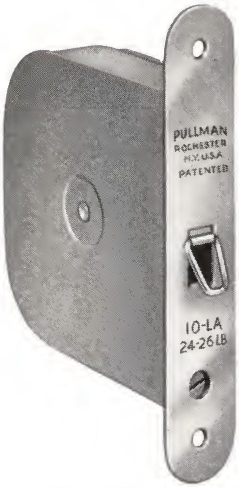
Weight of Unit "L" Per Set—9 to 11½ Lbs. **Extra Length of Tape, See Paragraph D, Page 31**
Extreme Length of Tape Possible: No. 3-L to 14-L Inclusive is 60″ . . . No. 15-L to 19-L is 54″ . . . See Page 31—How to Order

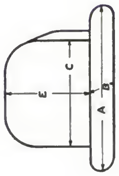
SIDE TYPE					OVERHEAD TYPE				
Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	Per Set of 4 Bal. For 2 Sash	Code Word	Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	Per Set of 4 Bal. For 2 Sash	Code Word
3-L	10 to 11	54	$3.65	Label	103-L	10 to 11	54	$3.65	Lash
4-L	12 to 13	“	“	Labor	104-L	12 to 13	“	“	Lasso
5-L	14 to 15	“	“	Lace	105-L	14 to 15	“	“	Lashing
6-L	16 to 17	“	4.05	Lack	106-L	16 to 17	“	4.05	Laster
7-L	18 to 19	“	“	Lactic	107-L	18 to 19	“	“	Latch
8-L	20 to 21	“	“	Lacona	108-L	20 to 21	“	“	Late
9-L	22 to 23	“	“	Lacteal	109-L	22 to 23	“	“	Lattice
10-L	24 to 26	“	4.60	Laddie	110-L	24 to 26	“	4.60	Laud
11-L	27 to 29	“	“	Lade	111-L	27 to 29	“	“	Laurel
12-L	30 to 32	“	“	Lading	112-L	30 to 32	“	“	Lava
13-L	33 to 35	“	“	Ladle	113-L	33 to 35	“	“	Laver
14-L	36 to 38	“	4.90	Lady	114-L	36 to 38	“	4.90	Law
15-L	39 to 41	“	“	Lag	115-L	39 to 41	“	“	Lawful
16-L	42 to 44	“	“	Laggard	116-L	42 to 44	“	“	Lawn
17-L	45 to 48	“	“	Lagging	117-L	45 to 48	“	“	Lead
18-L	49 to 51	“	5.50	Laid	118-L	49 to 51	“	5.50	Leap
19-L	52 to 54	“	“	Lair	119-L	52 to 54	“	“	Lean

UNIT "L-A" ADJUSTABLE BALANCES

UNIFORM MORTISE FOR SASH WEIGHING 10 TO 54 LBS.

Specify the Type required when ordering.



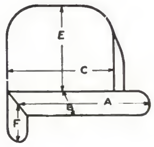


SIDE TYPE

⅓ Actual Size

Dimensions

A..........7 $\frac{7}{16}$″
B..........1⅜″
C..........4 $\frac{15}{16}$″
E..........4 $\frac{13}{16}$″



Dimensions

A..........6 $\frac{1}{16}$″
B..........1⅜″
C..........4 $\frac{15}{16}$″
E..........4 $\frac{13}{16}$″
F..........1 $\frac{5}{16}$″

OVERHEAD TYPE

⅓ Actual Size

Tape should be attached about 3″ below top rail of sash as compared with 10″ for Side Type—see drawing pages 19 and 20.

THIS SECOND SIZE of ADJUSTABLE BALANCE, UNIT "L-A", has the same wide range of adjustment up and down as UNIT "AA" making it possible to overcome any tendency of the sash to raise from the sill or drop from the top of the window opening due to incorrect weights being specified. Re-adjustment of the spring tension can be made as occasion may require within the limitations noted at the bottom of this page. These Balances have separate face plates which can be furnished in special finishes when required.

Patented August 18, 1936

Dummy Balances are furnished free of charge for mortising purposes.

Extra Length and Extreme Run or Travel of Tape Possible—Same as Unit "L" on Page 24

Weight of Unit "LA" Balances—10 to 14 Lbs. Per Set

See Page 31—How to Order

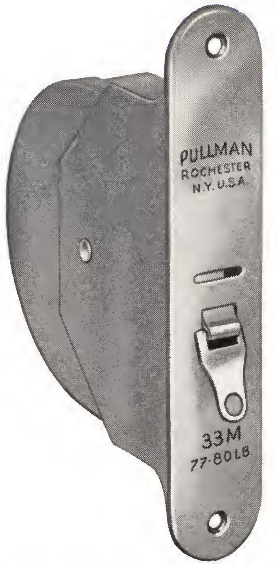
SIDE TYPE					OVERHEAD TYPE				
Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	Per Set of 4 Bal. For 2 Sash	Code Word	Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	Per Set of 4 Bal. For 2 Sash	Code Word
3-LA	10 to 11	54	$4.40	Least	103-LA	10 to 11	54	$4.40	Liar
4-LA	12 to 13	"	"	Leaving	104-LA	12 to 13	"	"	Libel
5-LA	14 to 15	"	"	Lecher	105-LA	14 to 15	"	"	Liberty
6-LA	16 to 17	"	4.85	Lectern	106-LA	16 to 17	"	4.85	Library
7-LA	18 to 19	"	"	Lector	107-LA	18 to 19	"	"	Librate
8-LA	20 to 21	"	"	Lecture	108-LA	20 to 21	"	"	License
9-LA	22 to 23	"	"	Ledger	109-LA	22 to 23	"	"	Lichen
10-LA	24 to 26	"	5.50	Legume	110-LA	24 to 26	"	5.50	Licit
11-LA	27 to 29	"	"	Leipoa	111-LA	27 to 29	"	"	Lick
12-LA	30 to 32	"	"	Leisure	112-LA	30 to 32	"	"	Lid
13-LA	33 to 35	"	"	Lemon	113-LA	33 to 35	"	"	Lief
14-LA	36 to 38	"	5.90	Leeward	114-LA	36 to 38	"	5.90	Lien
15-LA	39 to 41	"	"	Legacy	115-LA	39 to 41	"	"	Lieu
16-LA	42 to 44	"	"	Legal	116-LA	42 to 44	"	"	Life
17-LA	45 to 48	"	"	Legate	117-LA	45 to 48	"	"	Lift
18-LA	49 to 51	"	6.60	Legend	118-LA	49 to 51	"	6.60	Light
19-LA	52 to 54	"	"	Legible	119-LA	52 to 54	"	"	Lighten

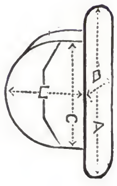
NOTE: These Balances are capable of adjustment to one size above and one size below the number stamped on the face of the Balance

UNIT "M" NON-ADJUSTABLE BALANCES

UNIFORM MORTISE FOR SASH WEIGHING 24 TO 105 LBS.

Specify the Type required when ordering.



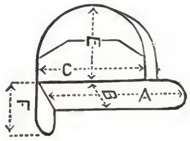


SIDE TYPE

⅓ Actual Size

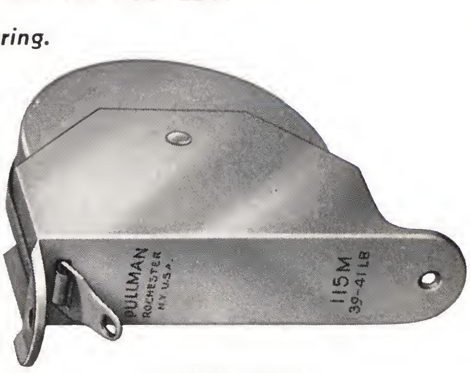
Dimensions

A.........8¾″
B.........1¾″
C.........$5\frac{13}{16}$″
E.........$5\frac{7}{16}$″



Dimensions

A.........7¼″
B.........1¾″
C.........$5\frac{13}{16}$″
E.........$5\frac{7}{16}$″
F.........1½″



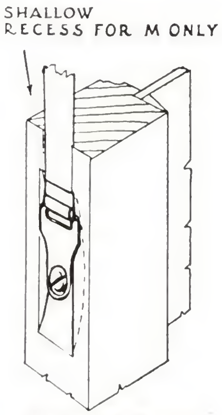
OVERHEAD TYPE

⅓ Actual Size

Tape should be attached about 3″ below top rail of sash as compared with 12″ for Side Type—see drawing pages 19 and 20.

UNIT "M" BALANCES are the largest size manufactured, being similar in construction to the UNIT "L." The maximum capacity of the UNIT "M" Balance is 105 lb. sash. They do not have separate face plates and cannot be used with the patented Tape Hook device. The special flat metal tape loop is attached to the sash with an ordinary screw as shown in the illustration herewith.

Dummy Balances are furnished free of charge for mortising purposes.



Method of Attaching Tape Loop to Sash

The Lengths of Tape Shown Below
Represent The Extreme Run or Travel Possible

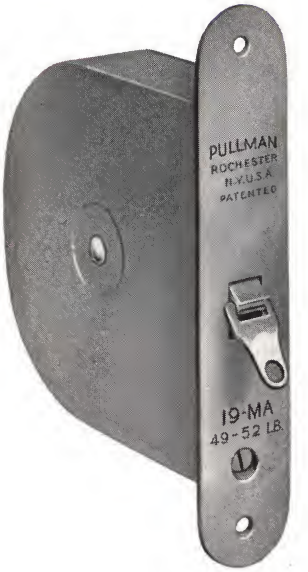
Weight of Unit "M" Per Set—19 to 23 Lbs. . . . Extra Length of Tape, See Paragraph D, Page 31 . . . Extreme Length of Tape Possible: No. 10-M to 25-M Incl. is 72″—27-M to 45-M is 60″ . . . See Page 31—How to Order

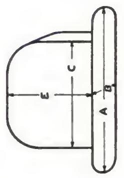
SIDE TYPE					OVERHEAD TYPE				
Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	Per Set of 4 Bal. For 2 Sash	Code Word	Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	Per Set of 4 Bal. For 2 Sash	Code Word
10-M	24 to 26	60	$7.35	Mace	110-M	24 to 26	60	$7.35	Mead
11-M	27 to 29	"	"	Machine	111-M	27 to 29	"	"	Meadow
12-M	30 to 32	"	"	Mackerel	112-M	30 to 32	"	"	Meager
13-M	33 to 35	"	"	Madam	113-M	33 to 35	"	"	Mealy
14-M	36 to 38	"	7.70	Madly	114-M	36 to 38	"	7.70	Meander
15-M	39 to 41	"	"	Madonna	115-M	39 to 41	"	"	Meaning
16-M	42 to 44	"	"	Magic	116-M	42 to 44	"	"	Measure
17-M	45 to 48	"	"	Magnate	117-M	45 to 48	"	"	Mecca
19-M	49 to 52	"	8.80	Magnet	119-M	49 to 52	"	8.80	Mechlin
21-M	53 to 56	"	"	Magnify	121-M	53 to 56	"	"	Meconic
23-M	57 to 60	"	"	Magnolia	123-M	57 to 60	"	"	Medal
25-M	61 to 64	"	"	Magpie	125-M	61 to 64	"	"	Medea
27-M	65 to 68	"	10.20	Mahogany	127-M	65 to 68	"	10.20	Median
29-M	69 to 72	"	"	Maiden	129-M	69 to 72	"	"	Medical
31-M	73 to 76	"	"	Mail	131-M	73 to 76	"	"	Medicine
33-M	77 to 80	"	"	Maintain	133-M	77 to 80	"	"	Meditate
35-M	81 to 84	"	11.20	Majestic	135-M	81 to 84	"	11.20	Medley
37-M	85 to 88	"	"	Major	137-M	85 to 88	"	"	Meeting
39-M	89 to 92	"	"	Maker	139-M	89 to 92	"	"	Megrim
41-M	93 to 96	"	11.90	Malady	141-M	93 to 96	"	11.90	Melada
43-M	97 to 100	"	"	Malice	143-M	97 to 100	"	"	Melilot
45-M	101 to 105	"	"	Malign	145-M	101 to 105	"	"	Mellow

UNIT "M-A" ADJUSTABLE BALANCES

UNIFORM MORTISE FOR SASH WEIGHING 24 TO 105 LBS.

Specify the Type required when ordering.



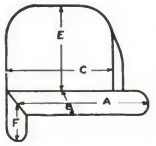


SIDE TYPE

$\frac{1}{3}$ Actual Size

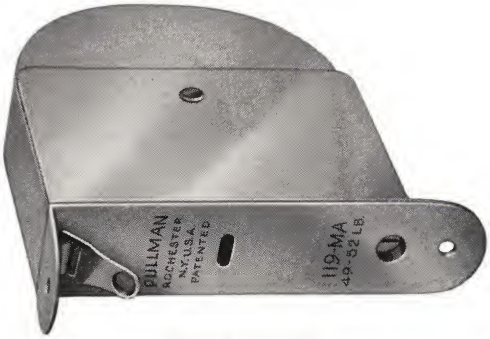
Dimensions

A . . . . $8\frac{3}{4}''$
B . . . . $1\frac{3}{4}''$
C . . . . $5\frac{15}{16}''$
E . . . . $5\frac{11}{16}''$



Dimensions

A . . . . $7\frac{9}{32}''$
B . . . . $1\frac{3}{4}''$
C . . . . $5\frac{15}{16}''$
E . . . . $5\frac{11}{16}''$
F . . . . $1\frac{13}{32}''$



OVERHEAD TYPE

$\frac{1}{3}$ Actual Size

Tape should be attached about 3″ below top rail of sash as compared with 12″ for Side Type—see drawing pages 19 and 20.

UNIT "M-A" BALANCES are the largest or third size of the Adjustable models and have the same features as the smaller Adjustable Balances shown on the preceding pages. The Tape Hook is not furnished with UNIT "MA" Balances which are attached to the sash in the same manner as UNIT "M" appearing on the opposite page.

Dummy Balances are furnished free of charge for mortising purposes.

Weight of Unit "MA" Balances Per Set—21 to 26 Lbs. **See Page 31—How to Order**

Extra Length and Extreme Run or Travel of Tape Possible—Same as Unit "M" Page 26

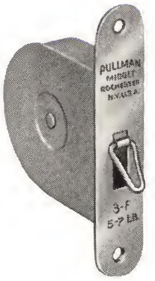
SIDE TYPE					OVERHEAD TYPE				
Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	Per Set of 4 Bal. For 2 Sash	Code Word	Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	Per Set of 4 Bal. For 2 Sash	Code Word
10-MA	24 to 26	60	$8.80	Mica	110-MA	24 to 26	60	$8.80	Moa
11-MA	27 to 29	"	"	Mico	111-MA	27 to 29	"	"	Moan
12-MA	30 to 32	"	"	Micro	112-MA	30 to 32	"	"	Moat
13-MA	33 to 35	"	"	Microbe	113-MA	33 to 35	"	"	Mob
14-MA	36 to 38	"	9.25	Mid	114-MA	36 to 38	"	9.25	Mocha
15-MA	39 to 41	"	"	Middle	115-MA	39 to 41	"	"	Mock
16-MA	42 to 44	"	"	Middy	116-MA	42 to 44	"	"	Mockery
17-MA	45 to 48	"	"	Midge	117-MA	45 to 48	"	"	Modal
19-MA	49 to 52	"	10.50	Midst	119-MA	49 to 52	"	10.50	Mode
21-MA	53 to 56	"	"	Mien	121-MA	53 to 56	"	"	Moderate
23-MA	57 to 60	"	"	Might	123-MA	57 to 60	"	"	Modern
25-MA	61 to 64	"	"	Mignon	125-MA	61 to 64	"	"	Modest
27-MA	65 to 68	"	12.25	Migrant	127-MA	65 to 68	"	12.25	Modicum
29-MA	69 to 72	"	"	Mikado	129-MA	69 to 72	"	"	Modify
31-MA	73 to 76	"	"	Milch	131-MA	73 to 76	"	"	Modiste
33-MA	77 to 80	"	"	Milk	133-MA	77 to 80	"	"	Modus
35-MA	81 to 84	"	13.45	Mildew	135-MA	81 to 84	"	13.45	Mogul
37-MA	85 to 88	"	"	Mile	137-MA	85 to 88	"	"	Mohair
39-MA	89 to 92	"	"	Mill	139-MA	89 to 92	"	"	Moire
41-MA	93 to 96	"	14.30	Million	141-MA	93 to 96	"	14.30	Moist
43-MA	97 to 100	"	"	Miller	143-MA	97 to 100	"	"	Mole
45-MA	101 to 105	"	"	Millet	145-MA	101 to 105	"	"	Molt

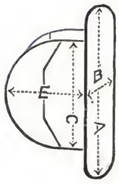
NOTE: These Balances are capable of adjustment to one size above and one size below the number stamped on the face of the Balance.

UNIT "F" NON-ADJUSTABLE "MIDGET" BALANCES

UNIFORM MORTISE FOR SASH WEIGHING 4 TO 15 LBS.

Specify the Type required when ordering.

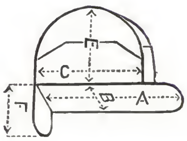




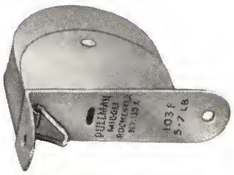
SIDE TYPE

⅓ Actual Size

Dimensions	
A	4½″
B	1″
C	2½″
E	2⅝″



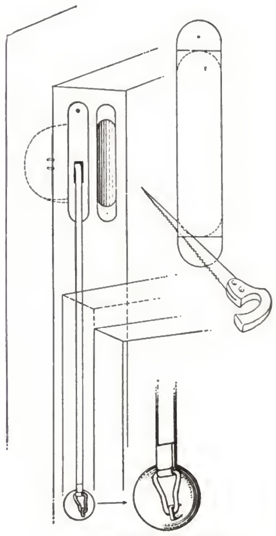
Dimensions	
A	3$\frac{7}{16}$″
B	1″
C	2½″
E	2⅝″
F	1$\frac{1}{16}$″



OVERHEAD TYPE

⅓ Actual Size

Tape should be attached about 3″ below top rail of sash as compared with 10″ for Side Type—see drawing pages 19 and 20.



Close up Detail

This close up illustration shows method of sawing out the round corners of a pulley mortise.

Having squared corners of mortise as above, the Balances will then slip into the mortise. The ¼″ tape will fit into the grooving of the sash for cords, and loop at end of tape is inserted in hole intended for knot on cord, being fastened in firmly with a staple.

PULLMAN MIDGET SASH BALANCES are especially designed for stock frames and sash. They are readily adaptable to pulley mortises, the tape fits the sash grooving and the complete installation is accomplished in a jiffy as compared with weights and cords. Midget Balances are identical in construction, material and workmanship with the larger models including double face plate, all moving parts entirely encased, and guaranteed for the life of the building, see page 4. Maximum capacity 15 lb. sash and extreme tape length 40 inches.

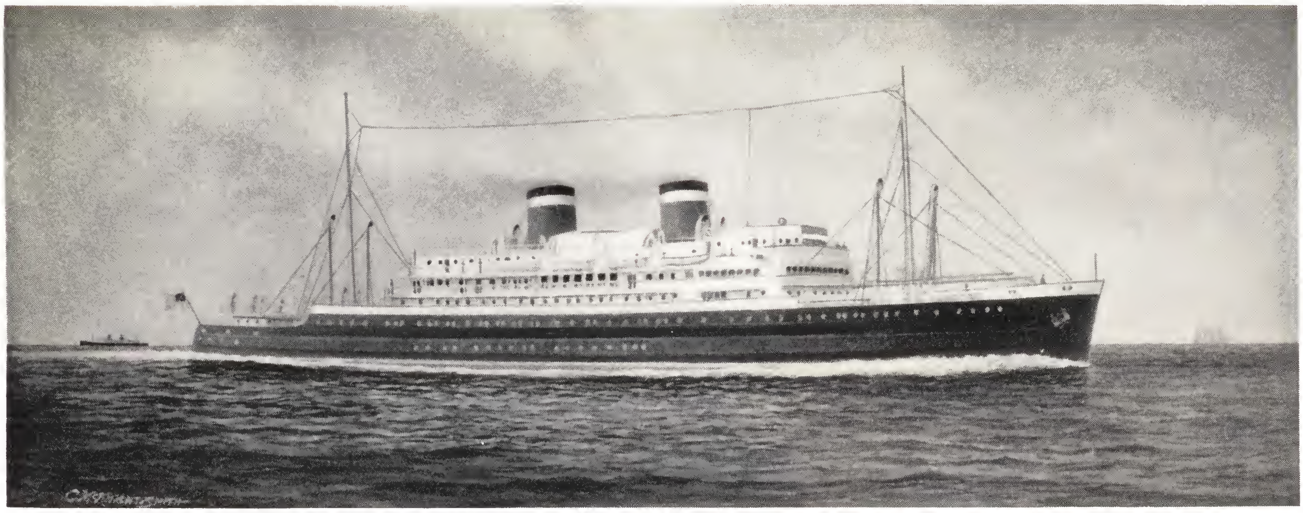
Dummy Balances are furnished free of charge for mortising purposes.

**The Lengths of Tape Shown Below
Represent The Extreme Run or Travel Possible**

See Page 31—How to Order

SIDE TYPE					OVERHEAD TYPE				
Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	Per Set of 4 Bal. For 2 Sash	Code Word	Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	Per Set of 4 Bal. For 2 Sash	Code Word
2-F	4 to 5	40	$1.70	Face	102-F	4 to 5	40	$1.70	Fear
3-F	5 to 7	"	"	Fade	103-F	5 to 7	"	"	Feat
4-F	7 to 9	"	"	Fail	104-F	7 to 9	"	"	Feed
5-F	9 to 11	"	1.85	Fake	105-F	9 to 11	"	1.85	Fell
6-F	11 to 13	"	"	Fall	106-F	11 to 13	"	"	Fend
7-F	13 to 15	"	"	Fame	107-F	13 to 15	"	"	Fern

NOTE: This small "Midget" model cannot be furnished in the Adjustable type.



MARINE UNIT "A" SASH BALANCE

MADE OF PRESSED SOLID BRASS

For Regular Use in Marine Work

Dimensions Same as Unit "A" Shown on Page 22   Approximate Weight 2½ Lbs. Per Pair   See Page 31—How to Order

SIDE TYPE					OVERHEAD TYPE				
Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	List Price Per Pair For 1 Sash	Code Word	Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	List Price Per Pair For 1 Sash	Code Word
602-A	4 to 5	46	$2.00	Adam	702-A	4 to 5	46	$2.00	Affable
603-A	5 to 7	"	2.25	Adamant	703-A	5 to 7	"	2.25	Affair
604-A	7 to 9	"	2.50	Adamic	704-A	7 to 9	"	2.50	Affect
605-A	9 to 11	"	2.75	Adapt	705-A	9 to 11	"	2.75	Affine
606-A	11 to 13	"	3.00	Aday	706-A	11 to 13	"	3.00	Affix
607-A	13 to 15	"	3.25	Addax	707-A	13 to 15	"	3.25	Afford
608-A	15 to 17	"	3.50	Adder	708-A	15 to 17	"	3.50	Affray
609-A	17 to 19	"	3.75	Adding	709-A	17 to 19	"	3.75	Affuse
610-A	19 to 21	"	4.00	Addle	710-A	19 to 21	"	4.00	Affy
611-A	21 to 23	"	4.25	Adduce	711-A	21 to 23	"	4.25	Afield
612-A	23 to 25	"	4.50	Adeem	712-A	23 to 25	"	4.50	Afloat
613-A	25 to 27	"	4.75	Adelo	713-A	25 to 27	"	4.75	Afoul
614-A	27 to 29	"	5.00	Adenine	714-A	27 to 29	"	5.00	Afresh

MARINE UNIT "A-A" SASH BALANCE

Dimensions Same as Unit "AA" Shown on Page 23   Approximate Weight 3 Lbs. Per Pair

SIDE TYPE					OVERHEAD TYPE				
Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	List Price Per Pair For 1 Sash	Code Word	Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	List Price Per Pair For 1 Sash	Code Word
602-AA	4 to 5	46	$2.40	Anabasis	702-AA	4 to 5	46	$2.40	Arab
603-AA	5 to 7	"	2.70	Anabolism	703-AA	5 to 7	"	2.70	Arable
604-AA	7 to 9	"	3.00	Anaconda	704-AA	7 to 9	"	3.00	Aramaic
605-AA	9 to 11	"	3.30	Anagram	705-AA	9 to 11	"	3.30	Arbiter
606-AA	11 to 13	"	3.60	Analect	706-AA	11 to 13	"	3.60	Arbitrate
607-AA	13 to 15	"	3.90	Analogue	707-AA	13 to 15	"	3.90	Arbor
608-AA	15 to 17	"	4.20	Analogy	708-AA	15 to 17	"	4.20	Arbutus
609-AA	17 to 19	"	4.50	Analysis	709-AA	17 to 19	"	4.50	Arcade
610-AA	19 to 21	"	4.80	Analyst	710-AA	19 to 21	"	4.80	Arcadian
611-AA	21 to 23	"	5.10	Analyze	711-AA	21 to 23	"	5.10	Arch
612-AA	23 to 25	"	5.40	Anarchic	712-AA	23 to 25	"	5.40	Archaic
613-AA	25 to 27	"	5.70	Anarchist	713-AA	25 to 27	"	5.70	Archer
614-AA	27 to 29	"	6.00	Anarchy	714-AA	27 to 29	"	6.00	Archery

NOTE: These Unit "AA" Balances are capable of adjustment to one size above and one size below the number stamped on the face of the Balance.

PULLMAN MARINE UNIT SASH BALANCES are used for vessels of all kinds from yachts and ferry boats to ocean liners and naval vessels. They are of solid brass, rust proof construction throughout, non-breakable and entirely encased thereby insuring a double protection from the action of salt water. They represent the only practical device for sliding sash on ships of every description and possess all of the merits and advantages of the pressed steel type being neat and attractive in appearance and offering continued satisfactory operation and durability. Specify whether Side or Overhead type is required when ordering.

●

MARINE UNIT "L" SASH BALANCE

MADE OF PRESSED SOLID BRASS

For Regular Use in Marine Work

Dimensions Same as Unit "L" Shown on Page 24 Approximate Weight $5\frac{1}{2}$ Lbs. per Pair See Page 31—How to Order

SIDE TYPE					OVERHEAD TYPE				
Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	List Price Per Pair For 1 Sash	Code Word	Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	List Price Per Pair For 1 Sash	Code Word
610-L	24 to 26	54	$5.75	Indefinite	710-L	24 to 26	54	$5.75	Culprit
611-L	27 to 29	“	6.00	Indelicate	711-L	27 to 29	“	6.00	Cultivate
612-L	30 to 32	“	6.25	Indent	712-L	30 to 32	“	6.25	Culture
613-L	33 to 35	“	6.50	India	713-L	33 to 35	“	6.50	Cumber
614-L	36 to 38	“	6.75	Indian	714-L	36 to 38	“	6.75	Cumin
615-L	39 to 41	“	7.25	Indict	715-L	39 to 41	“	7.25	Cuneal
616-L	42 to 44	“	7.75	Indigo	716-L	42 to 44	“	7.75	Cup
617-L	45 to 48	“	8.25	Indorse	717-L	45 to 48	“	8.25	Cupel
618-L	49 to 51	“	8.75	Indolent	718-L	49 to 51	“	8.75	Curable
619-L	52 to 54	“	9.25	Industry	719-L	52 to 54	“	9.25	Curator

MARINE UNIT "M" SASH BALANCE

MADE OF PRESSED SOLID BRASS

For Regular Use in Marine Work

Dimensions Same as Unit "M" Shown on Page 26 Approximate Weight $10\frac{1}{2}$ Lbs. Per Pair

SIDE TYPE					OVERHEAD TYPE				
Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	List Price Per Pair For 1 Sash	Code Word	Balance Number	Weight of Each Sash (Pounds)	Length of Tape (Inches)	List Price Per Pair For 1 Sash	Code Word
619-M	49 to 52	60	$ 9.50	Monad	719-M	49 to 52	60	$ 9.50	Much
621-M	53 to 56	“	10.00	Monal	721-M	53 to 56	“	10.00	Muck
623-M	57 to 60	“	10.25	Monarch	723-M	57 to 60	“	10.25	Mucker
625-M	61 to 64	“	10.50	Monarchy	725-M	61 to 64	“	10.50	Muckrake
627-M	65 to 68	“	10.75	Monastic	727-M	65 to 68	“	10.75	Mucky
629-M	69 to 72	“	11.00	Mondaine	729-M	69 to 72	“	11.00	Mud
631-M	73 to 76	“	11.25	Monetize	731-M	73 to 76	“	11.25	Muddle
633-M	77 to 80	“	11.50	Moneyed	733-M	77 to 80	“	11.50	Muddy
635-M	81 to 84	“	11.75	Monger	735-M	81 to 84	“	11.75	Muff
637-M	85 to 88	“	12.00	Mongol	737-M	85 to 88	“	12.00	Muffin
639-M	89 to 92	“	12.25	Mongrel	739-M	89 to 92	“	12.25	Muffle
641-M	93 to 96	“	12.50	Moniker	741-M	93 to 96	“	12.50	Mug
643-M	97 to 100	“	12.75	Monism	743-M	97 to 100	“	12.75	Mugger
645-M	101 to 105	“	13.00	Monitor	745-M	101 to 105	“	13.00	Muggy

NOTE: Marine Balance Units "L" and "M" are not furnished in Adjustable types.

HOW TO ORDER

This catalog supercedes all previous issues and should be followed carefully and exclusively for Specification Purposes

(A) GIVE WEIGHT OF EACH SASH

Weight is usually marked on each sash at the mill. Generally the upper and lower sash weigh the same but it is safer to weigh each sash separately.

FOR SASH WEIGHING 4 TO 15 POUNDS

Unit "F" Balances may be used. Each Balance in this weight range will fit a uniform mortise.

FOR SASH WEIGHING 4 TO 29 POUNDS

Unit "A" or Unit "A-A" may be used and each Balance of each type in this weight range will fit a uniform mortise.

FOR SASH WEIGHING 10 TO 54 POUNDS

Unit "L" or Unit "L-A" may be used and each Balance of each type in this weight range will fit a uniform mortise.

FOR SASH WEIGHING 24 TO 105 POUNDS

Unit "M" or Unit "M-A" may be used and each Balance of each type in this weight range will fit a uniform mortise.

(B) CAUTION

Do not estimate weight of sash but weigh each sash separately. Be sure to leave sufficient space at top or sides of frames for Balances. See dimensions of Balances on page describing the size of Balance which you expect to use, or on Plates B and C on Pages 19 and 20. Attach tape to sash for Overhead Type 3″ down from top rail and 10″ down for Side Type as shown on Plate D page 21.

(C) FINISH

All exposed surfaces of all types of Balances except the Marine Balances have special Electro - Galvanized Zinc Coated rust resisting finish. Balances can also be furnished with solid brass or bronze face plates and with electro-plated brass, bronze, nickel, copper or chromium face plates at a small additional price.

(D) RUN AND LENGTH OF TAPE

Run of Tape represents in inches the distance the sash can travel within the window opening. Extra Tape length does not increase the run or lift of the Balances. It only permits placing them higher or farther away from the sash. An extra charge is made for additional run or length of tape beyond that appearing in the tables.

(E) OVERLAPPING OF UNITS

A given job may, for example, require Unit "L" throughout with the exception of a very few sash that weigh less than 30 pounds, while all the other sash range in weight from 30 to 54 pounds. If Unit "A" is used for the lighter sash our experience shows that mistakes are sometimes made in mortising the frames.

Our schedules have, therefore, been arranged so that Unit "L" or Unit "M" as the case may be, can be obtained to cover the lighter sizes of sash and the mortises can be kept uniform in size for the entire job.

(F) DO NOT MORTISE FROM DIMENSIONS

Dummies or templates for mortising purposes should be secured. They are furnished free of charge on request.

INSTRUCTIONS FOR DETERMINING PROPER MORTISES IN FRAMES FOR PULLMAN SASH BALANCES

1. Check specifications and plans closely and find out—
   - (a) Kind of glass
   - (b) Thickness of sash
   - (c) Whether or not both sash are of same size
   - (d) Whether Pullman Balances are to be Overhead or Side type.
   - (e) Whether sash have angle iron reinforcing at corners
2. Estimate the approximate weight of sash from following table. If angle iron reinforcement is used on sash add 4 pounds to the approximate weight of each sash as found by the table.
3. If the weight of each sash is not more than 29 lbs., mortise should be made for UNIT "A" or UNIT "A-A" Balance; sash weighing from 30 lbs. to 54 lbs. should be mortised for UNIT "L" or UNIT "L-A" Balance; and sash weighing from 55 lbs. to 105 lbs. should be mortised for UNIT "M" or UNIT "M-A" Balance.

   WHEN SASH WEIGH CLOSE TO THE LIMIT OF ANY UNIT THE MORTISES SHOULD BE MADE FOR NEXT LARGER UNIT, AS ACTUAL WEIGHT OF SASH OFTEN OVERRUNS ESTIMATED WEIGHT.

TABLE FOR ESTIMATING WEIGHTS OF SASH

This table must *only* be used for determining proper mortise in frames or for estimating prices. The exact weight (by scales) of each individual sash (Upper and Lower separately) *must* be specified when Balances are actually ordered.

To estimate the weight of sash, multiply the number of square feet in window opening by the figure in the table that corresponds to the kind of glass and the thickness of sash used. The result will be the approximate weight of both sash. If the sash are the same size and are glazed exactly alike divide this result by two, for approximate weight of each sash.

Kind and Thickness of Glass	Approx. Weight Per Sq. Ft. Unglazed Lb.-Oz.	Glazed in 1⅜″ Sash Lb.-Oz.	Glazed in 1¾″ Sash Lb.-Oz.	Glazed in 2″ Sash Lb.-Oz.	Glazed in 2¼″ Sash Lb.-Oz.	Glazed in 2½″ Sash Lb.-Oz.
Single Strength	1- 3	1-14	2- 0	2-2	2- 4	2- 6
Double Strength	1- 9	2- 2	2- 5	2-8	2-10	2-12
⅛″ Polished Plate	2- 0	3- 2	3- 5	3-8	3-10	3-12
3/16″ Polished Plate	2- 8	3-10	3-13	4-0	4- 2	4- 4
¼″ Polished Plate	3- 8	4-10	4-13	5-0	5- 2	5- 4
¼″ Polished Wired	3-12	4-14	5- 1	5-4	5- 6	5- 8
⅛″ Rough, Ribbed or Corrugated	2- 0	3- 2	3- 5	3-8	3-10	3-12
⅛″ Florentine, Moss	2- 0	3- 2	3- 5	3-8	3-10	3-12
3/16″ Florentine, Moss	2- 8	3-10	3-13	4-0	4- 2	4- 4
⅛″ Opal and Rippled	1- 8	2-10	2-13	3-0	3- 2	3- 4
3/32″ Hammered Cathedral, Double Rolled and Opalescent	1- 8	2-10	2-13	3-0	3- 2	3- 4

Weights given above are per square foot sash area excepting first column which is estimated weight per square foot of glass unglazed as given by Pittsburgh Plate Glass Co.

SALES REPRESENTATIVES

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Fred J. Allen	1001 Broadway	New Orleans, La.
Construction Products Corporation	60 Lispenard Street	New York City, N. Y.
Perry T. Dean	836 Northeast 88th Street	Miami, Florida
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W. L. Glade	1421 Sherman Avenue	Salt Lake City, Utah
Herbert Golterman	612 Louderman Bldg.	St. Louis, Mo.
C. E. Harris	99 Bedford St., Room 317	Boston, Mass.
S. M. Hawkins	2820 North 33rd Street	Omaha, Nebraska
Modern Building Specialties Co. J. W. Housel	4746 Market Street	Philadelphia, Pa.
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Export Department: Pullman Mfg. Corporation	20 Vesey Street	New York City, N. Y.
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James A. P. Bowhill	Kew Cottage, Spooner's Hill, St. Michael No. 10	Barbados, B. W. I.
Vladimir Zibilich	2 Rue Gare du Caire	Alexandria, Egypt
Richards-Wilcox Canadian Co., Ltd.		London, Ont., Canada

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Representatives of Richards-Wilcox Canadian Co. Ltd., in Great Britain

Robert Adams, Victor Ltd.	3-5 Emerald Street	London, England
N. F. Ramsay & Co. Ltd.	Charlotte Square	Newcastle-on-Tyne, England

PULLMAN MFG. CORPORATION

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